ANNOUNCING THE

"BEST OF" SERIES

The "Best Of" Series is a collection of four of the most frequently requested titles from our video catalog. To order this series, bring or mail a two-hour VHS tape to the NASA Educator Resource Center. We will duplicate this tape and mail it back to you.

	Run Time	Grade	Cat. #
"Best of Series"	**1 hr. 52 min.**	**All**	**BO1**

This tape consists of the following four titles.

Astrosmiles
Toys in Space
Eating and Sleeping in Space
Spacewatch

AERONAUTICS

	Run Time	Grade	Cat. #

FLYING MACHINES **28:00** **9-Adult** **A1**
Depicts aviation today and tomorrow--how we got where we are and where we plan to go. Topics covered include wind tunnels, power plants, materials, safety, comfort, and noise abatement.

AMERICA'S WINGS **28:00** **9-Adult** **A2**
Outlines the major contributions of those in aviation that have been responsible for development of improved aircraft wings.

MAN'S REACH SHOULD EXCEED HIS GRASP **23:00** **4-9** **A3**
Presents the story of flight and of man's reach for new freedom through aviation and the exploration of space. Narrated by Burgess Meredith.

AERONAUTICAL ODDITIES **16:00** **4-9** **A4**
Looks at man's early attempts to fly.

SPACE RESEARCH AND YOU: YOUR TRANSPORTATION **15:00** **7-Adult** **A5**
Looks at continuing NASA research to improve transportation on land, water, and in the air. Topics examined include computer simulations used for training ships' crews; vertical takeoff and landing planes; electric cars; hydrofoils; and the space shuttle.

FLIGHT WITHOUT WINGS **17:00** **6-12** **A6**
Traces the development of the wingless body and relates it to the Space Shuttle.

THE HIGHER WE FLY **55:00** **6-12** **A7**
Describes the history and the future of aeronautics. John Denver narrates.

AERONAUTICS PAST, PRESENT AND FUTURE **17:00** **6-Adult** **A8**
Describes our relationship with aeronautics from yesterday into tomorrow.

MILESTONES OF FLIGHT **22:00** **4-10** **A9**
Traces the history of flight from Langley's first attempt to the Space Shuttle. This program was produced by the National Air and Space Museum. Includes live footage from many history-making events.

REDUCED GRAVITY PROGRAM **7:00** **9-Adult** **A10**
Explains some advantages of a reduced gravity program such as: testing equipment, astronaut training, and pre-testing of future Space Shuttle experiments.

	Run Time	Grade	Cat. #
PICTURES IN THE MIND	**9:30**	**6-12**	**A11**

Gives a historical look at flight and how aeronautics became an industry that improved American aviation. This is a documentary about the Langley Research Center in Hampton, Virginia.

NASA AND THE EVOLUTION OF AERONAUTICS

	Run Time	Grade	Cat. #
NASA AND THE GOLDEN DAYS OF FLIGHT	**29:00**	**9-Adult**	**AB1**

Traces the very first days of powered flight as told by aeronautical pioneer Paul Barber, historian emeritus of the Smithsonian's National Air and Space Museum, Washington, D.C. Historical pictures of the early days of flight are featured.

NASA AND AMERICA'S WINGS	**29:00**	**9-Adult**	**AB2**

Examines some of the ideas that led to the development of the airplane. Briefly looks at people whose contributions were important to the world of aviation and how their ideas changed aviation.

NASA THE 60s STRIDES TOWARD THE FUTURE	**29:00**	**9-Adult**	**AB3**

Discusses how the 60s were of major importance in the development of aeronautics. This tape shows NASA's progress through the use of wind tunnels, research on hydroplaning and vertical takeoff and landing aircraft.

NASA AND RESEARCH PROJECT X-15	**28:00**	**9-Adult**	**AB4**

Examines the X-15's development. Dramatic photography of X-15 flights and landings is included.

NASA AND QUIETER, FASTER AND SAFTER AIRCRAFT	**30:00**	**9-Adult**	**AB5**

Covers NASA aeronautical research. NASA projects to reduce jet engine noise, to develop planes that can travel faster and to improve aircraft safety are covered.

NASA AND CRASHES, HANG GLIDERS AND UNDERWATER PLANES	**28:00**	**9-Adult**	**AB6**

Reveals different approaches to NASA's aeronautical studies. Research takes place on land and sea, as well as in the air. Explains NASA's efforts to reduce wake turbulence-invisible "tracks" in the air that trail behind flying airplanes.

	Run Time	Grade	Cat. #

NASA AND FLYING MACHINES **30:00** **9-Adult** **AB7**
Shows aspect of aviation research and development. Wind tunnels, power plants, safety and fuel-savings are covered.

NASA AND LOOKING AHEAD AND BACK **29:00** **9-Adult** **AB8**
Covers life-space tests for aircraft tires and a look at the future and what it may hold for NASA, as well as a look at past accomplishments.

NASA SETTING THE STAGE FOR THE FUTURE **28:00** **9-Adult** **AB9**
Presents some of the projects NASA is slated to work on for the rest of the 1980s, including airplane computers and the XV-Tiltrotor.

NASA AND BEHIND THE SCENES AT THE NATIONAL AIR AND SPACE **29:00** **9-Adult** **AB10**
Discusses the Smithsonian's National Air and Space Museum. E. T. Woolridge, Director of Aeronautics, discusses the museum's development.

NASA AND PROGRESS IN AERONAUTICS **29:00** **9-Adult** **AB11**
Examines NASA's role in improving performance and safety of aircraft. The effects of airflow and turbulence on aircraft are presented.

THE AMES RESEARCH FLEET **29:00** **9-Adult** **AB12**
Shows how various NASA Ames-based aircraft are used for research. The aircraft are used for astronomy, Earth studies and other research.

ASTOUNDED AT THE PAST **29:00** **9-Adult** **AB13**
Reviews a montage of aviation research and technology development.

NASA HUBBLE SPACE TELESCOPE **7:15** **9-Adult** **AB14**
Reviews the use of the Hubble space telescope.

HOW AN AIRPLANE FLIES **60:00** **All** **AB15**
Discusses what makes an airplane fly.

AERONAUTICS AND SPACE REPORTS

	Run Time	Grade	Cat. #

REPORT #249 **15:00** **11-Adult** **AC1**
Reports on Firefighters' Breathing System, supporting life in space, the future of robotics, and the Arctic Ozone Expedition.

REPORT #251 **15:00** **11-Adult** **AC2**
Reports on combating malaria, Voyager's last encounter, better airplane wings, and sights and sounds of space.

REPORT #252 **15:00** **11-Adult** **AC3**
Reports on Hubble Space Telescope, Louisiana Delta Study, enhancing sight, and views from space.

REPORT #253 **15:00** **11-Adult** **AC4**
Discusses technology utilization.

REPORT #254 **15:00** **11-Adult** **AC5**
Discusses the future energy source, Global Greenhouse Expedition. LDEF update, and NACA-NASA: 75 years.

REPORT #255 **15:00** **11-Adult** **AC6**
Reports on Magellan, Galileo and Ulysses, finding fish from above, the X-29 experiment in flight and improving the mapping system.

REPORT #256 **15:00** **11-Adult** **AC7**
Discusses the ocean waves, recycling in space, space adaptation, and the new prosthetic device.

REPORT #257 **15:00** **11-Adult** **AC8**
Reports on the new Aerospace Plane, advanced microsensors, Goldstone and Spacelab life sciences 1.

REPORT #258 **15:00** **11-Adult** **AC9**
Discusses Virtual Reality, scientific balloons, aircraft to medicine, and the model builders.

REPORT #259 **15:00** **11-Adult** **AC10**
Reports on Endeavor's first flight, master glass blower, world's largest paper airplane, and NASA's photo album.

	Run Time	Grade	Cat. #
REPORT #260	**15:00**	**11-Adult**	**AC11**

Discusses the Shuttle to Space Station, heart assist implant, Hubble update, and the X-30 mock-up.

REPORT #261	**15:00**	**11-Adult**	**AC12**

Reports on storm seekers, potatoes from above, Dante the Robotic Explorer, and dedicated to flight.

REPORT #262	**15:00**	**7-Adult**	**AC13**

Discusses Greenland Ice, search and rescue radar, sounding rockets and low vision system.

REPORT #263 THROUGH 266	**24:00**	**7-Adult**	**AC14**

Reports on assisting wine growers, airline safety and economy, "Perseus: Global Watcher" and refocusing space technology.

BIOLOGY AND SPACE
EXPLORATION VIDEO SERIES

	Run Time	Grade	Cat. #

THE ORIGIN AND EARLY EVOLUTION OF LIFE — **21:00** — **4-Adult** — **B1**

Explores Earth's early stages of existence and the theories proposed to explain the evolution of life on Earth.

SETI: THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE — **21:00** — **4-Adult** — **B2**

Examines how present-day technology is used to seek evidence of intelligent life elsewhere in the Universe.

THE CARDIOVASCULAR SYSTEM IN SPACE — **18:00** — **4-Adult** — **B3**

Provides a detailed account of the effects of gravity on the human circulatory system. Discusses how the loss of gravity-induced blood pressure gradients lead to medical problems associated with headward edema, reduced blood volume, and post flight orthostatic intolerance.

GROUP INTERACTIONS AND CREW PERFORMANCE — **23:00** — **4-Adult** — **B4**

Elaborates on group cohesion, open communication and overall well-being among the crew members.

LIFE SUPPORT SYSTEMS IN SPACE — **12:00** — **4-Adult** — **B5**

Outlines the potential hazards faced by astronauts on space missions. Describes the equipment required for survival in environments hostile to life.

CAREERS

	Run Time	Grade	Cat. #

WHERE DREAMS COME TRUE **29:00** **11-Adult** **C1**
Discusses NASA career opportunities for minorities and women. You don't have to be an astronaut to work for NASA. The agency offers other jobs ranging from clerks, secretaries and electricians to safety engineers, administrators, system analysts and computer programmers.

TAKE THE HIGH ROAD
CAREERS IN AEROSPACE **15:00** **7-12** **C2**
Provides a brief description of aerospace-related careers to familiarize students with the educational preparation required.

PREPARING TODAY FOR
TOMORROW **32:00** **4-8** **C3**
Shows a detailed look at the career opportunities offered in aerospace at NASA Langley Research Center. Students from 6th and 7th grades are given a first hand look into the many careers offered at NASA.

NOAA CORPS:
THE SEVENTH SERVICE **27:00** **9-12** **C4**
Looks into the opportunities NOAA has to offer in oceanography, meteorology, biology, physics, troop training, sea duty, and shore duty. Obtained from the National Oceanic and Atmospheric Administration.

WINNING AEROSPACE
THE NEXT DECADE **21:00** **7-12** **C5**
Introduces students to the unique career opportunities in America's aerospace industry.

ENGINEERS: TURNING
IDEAS INTO REALITY **8:00** **9-Adult** **C6**
Shows a series of short commentaries by several engineers on why they chose their particular field of engineering and how they feel it impacts their everyday lives.

REACHING FOR THE STARS **13:00** **7-12** **C7**
Discusses astronaut training.

SET CAREERS - LINEAR PROFILE **8:00** **7-12** **C8**
Looks at the career of Greg Frazier, Aerospace Engineer.

FAA VIDEO PROGRAMS

	Run Time	Grade	Cat. #
LOOKING UP TO YOUR AVIATION CAREER	**14:00**	**6-Adult**	**D1**
A LOOK TO WHERE WE'RE GOING	**17:00**	**6-Adult**	**D2**
CLEARED FOR TAKEOFF	**5:00**	**6-Adult**	**D3**
CONTROLLED IMPACT DEMONSTRATION	**15:00**	**6-Adult**	**D4**
FLIGHT 52	**14:00**	**6-Adult**	**D5**
HOW AIRPLANES FLY	**18:00**	**6-Adult**	**D6**
IN CELEBRATION OF FLIGHT	**28:00**	**6-Adult**	**D7**
AEROMEDICAL FACTORS	**30:00**	**6-Adult**	**D8**
DISORIENTATION	**19:00**	**6-Adult**	**D9**
MEDICAL FACTS FOR PILOTS	**25:00**	**6-Adult**	**D10**
EAGLE EYED PILOT	**24:00**	**6-Adult**	**D11**
MOUNTAIN FLYING	**23:00**	**6-Adult**	**D12**
AVIATION WEATHER	**25:00**	**6-Adult**	**D13**
AVIATION VIDEOCONFERENCE	**25:00**	**6-Adult**	**D14**

FREEDOM AND SCIENCE

	Run Time	Grade	Cat. #
UNDERGROUND RAILROAD	**35:00**	**4-Adult**	**E1**

Increases student awareness of the Underground Railroad and the role celestial navigation played in the Railroad's success. NASA's Classroom of the Future in cooperation with NASA Headquarters produced this video.

HEARING IMPAIRED VIDEOS

	Run Time	Grade	Cat. #
HISTORY OF SPACE TRAVEL THE UNIVERSE (OPEN CAPTION)	**28:10**	**7-12**	**F1**
HISTORY OF SPACE TRAVEL THE UNIVERSE (CLOSED CAPTION)	**28:10**	**7-12**	**F2**
SHUTTLE DEMONSTRATION FOR THE HEARING IMPAIRED	**15:00**	**7-12**	**F3**
PORTRAIT OF EARTH (CLOSED CAPTION)	**33:00**	**2-4**	**F4**
MARS: THE NEXT STEP (OPEN CAPTION)	**5:36**	**4-8**	**F5**
NASA FLYING MACHINES (OPEN CAPTION)	**30:00**	**9-Adult**	**F6**
EATING AND SLEEPING IN SPACE (OPEN CAPTION)	**30:00**	**4-12**	**F7**
TO DREAM TO LEARN (OPEN CAPTION)	**29:00**	**4-Adult**	**F8**
SPACE SHUTTLE DEMONSTRATION SIGNED FOR THE HEARING IMPAIRED	**15:00**	**4-Adult**	**F9**

HISTORY OF SPACE FLIGHT

	Run Time	Grade	Cat. #

NASA HISTORICAL MANNED SPACE FLIGHT FILMS — **58:00** — **6-12** — **G1**

Discusses the Mercury, Gemini, Apollo, Skylab, Apollo-Soyuz, and Space Shuttle programs.

BLUE PLANET — **9:00** — **6-12** — **G2**

Features an overview of the space program with highlights of America's role in space exploration. Narrated by Burgess Meredith.

PIONEERING THE SPACE FRONTIER THE NEXT FIFTY YEARS — **33:00** — **10-12** — **G3**

Covers such topics as the International Space Station, colonizing the moon, developing new transportation system, and space colonies of the future. Such space and aviation notables as Chuck Yeager, Neil Armstrong, Carl Sagan, and Sally Ride narrate different segments. This program was produced by the National Commission on Space.

SPACE SHUTTLE OVERVIEW — **30:00** — **7-12** — **G4**

Reports on the preparations for an early 1981 Space Shuttle launch. The program covers the mission, the flight crew training, rocket engine tests, problems involving the thermal protection system tiles and efforts of the NASA industry team during the final launch stages.

BEFORE SATURN AND AMERICA IN SPACE — **30:00** — **7-12** — **G5**

Looks at the development of rockets from the early Chinese efforts through the development of the Saturn 1 booster.

ASTRONAUTS: U.S. PROJECT MERCURY — **30:00** — **7-12** — **G6**

Reports on the original Mercury astronauts. Explains their selection, testing and training for America's first manned space program.

FREEDOM 7 — **30:00** — **7-12** — **G7**

Views the first American manned space mission as the subject of this program. The training, preparation, launching and recovery of astronaut Alan B. Shepard, Jr., for the first Project Mercury suborbital flight.

	Run Time	Grade	Cat. #

FRIENDSHIP 7 PART I **30:00** **7-12** **G8**
Illustrates a historical documentary illustrating in detail the first American orbital space flight by astronaut John Glenn in 1962. The program also provides background on Project Mercury and the tracking network planned for the one-man Mercury missions.

FRIENDSHIP 7 PART II **30:00** **7-12** **G9**
Illustrates in detail the first American orbital space flight by astronaut John Glenn in 1962. The program also provides background on Project Mercury and the tracking network planned for the one-man Mercury missions.

YOUR SHARE IN SPACE **30:00** **7-12** **G10**
Relates space science discoveries and their application in the daily lives of citizens.

LEGACY OF GEMINI **30:00** **7-12** **G11**
Illustrates the major accomplishments of the Gemini two-man space flights and the significance of these flights to the Apollo program.

DEBRIEFING - APOLLO 8 **30:00** **7-12** **G12**
Illustrates the story of mankind's first orbit around the Moon as told with commentary on the significance of the Apollo 8 flight by several prominent Americans.

THE EAGLE HAS LANDED
FLIGHT OF APOLLO 11 **30:00** **7-12** **G13**
Describes the story of man's first moon landing in July of 1969.

APOLLO 16 - NOTHING
SO HIDDEN **30:00** **7-12** **G14**
Reviews the documentary account of the Apollo 16 lunar landing mission and exploration in the highland region of the moon, near the crater Descartes.

FOUR ROOMS EARTHVIEW **30:00** **7-12** **G15**
Tells the story of the three missions, the nine astronauts and their 171 days in the manned laboratory. Crisscrossing 70 percent of Earth's land area, Skylab sensors gathered information about many features of the planet. Skylab was the first U. S. manned space station.

THE MISSION OF
APOLLO/SKYLAB **30:00** **7-12** **G16**
Tells the story of the Apollo/Soyuz mission. The program stresses the spirit of cooperation and friendship that helped make the mission a success.

	Run Time	Grade	Cat. #
VOYAGER OF SATURN ENCOUNTER	**30:00**	**7-12**	**G17**

Views the history of the Voyager and its study of Saturn.

THE MISSION OF APOLLO	**30:00**	**7-12**	**G18**

Reviews the history of the Apollo mission.

SPACE, OCEANS, EARTH (STENNIS SPACE CENTER MOVIE)	**13:00**	**6-Adult**	**G19**

Provides a history of SSC and an overview of resident agencies, research, and current activities on this NASA site.

SEEING BEYOND THE OBVIOUS UNDERSTANDING PERCEPTIONS IN EVERYDAY	**46:00**	**9-Adult**	**G20**

Covers basic issues of visual display technology. This film is intended to motivate student interest.

NASA - THE 25th YEAR	**50:00**	**9-Adult**	**G21**

Describes a general overview of the many highlights and accomplishments of NASA from its inception in 1958, through the leadership of President John F. Kennedy in 1961, to the landing of the Space Shuttle Challenger, with the first American woman in space aboard.

NASA - THE 28TH YEAR	**50:00**	**9-Adult**	**G22**

Gives an update of the 28th year looking at the past, present and future of NASA.

HISTORY OF SPACE FLIGHT
TWENTY-FIVE YEARS OF PROGRESS

	Run Time	Grade	Cat. #
THE BIRTH OF NASA	**30:00**	**7-12**	**GA1**

Highlights the beginning of NASA (1958) and its early programs, including the introduction of a quality control program.

THE MOON A GOAL	**30:00**	**7-12**	**GA2**

Includes several milestones in 1960 and 1961. These milestones included two highly successful unmanned orbital flights, the world's first weather and passive communications satellite and two manned suborbital flights.

	Run Time	Grade	Cat. #
AROUND THE WORLD AND ON THE WAY	**30:00**	**7-12**	**GA3**
Details John Glenn's first Earth's orbit.			
PREPARING FOR THE MOON	**30:00**	**7-12**	**GA4**
Illustrates continued improvements to the liquid hydrogen/oxygen rocket. Also examines lunar photographs taken by Ranger 7, the tests performed on three Saturn Rockets and the plans that were made on Surveyor's landing on the moon's surface.			
GEMINI - THE TWINS	**30:00**	**7-12**	**GA5**
Details the 1964-66 two-man Gemini space flights.			
AROUND THE MOON	**30:00**	**7-12**	**GA6**
Details the events of a 1967 preflight test of Apollo spacecraft during which a fire erupted in the command module resulting in the death of three astronauts.			
MOON LANDING	**30:00**	**7-12**	**GA7**
Focuses on the first moon landing in 1969.			
MORE MOON EXPLORATION	**30:00**	**7-12**	**GA8**
Discusses Mariner 9 mapping the entire surface of Mars and Pioneer 10 returning the first close up pictures of Jupiter.			
TRANSITION YEARS	**30:00**	**7-12**	**GA9**
Depicts the Apollo-Soyuz mission which marked the first joint U. S./USSR space mission.			
SHUTTLE PREPARATION AND PLANETS	**30:00**	**7-12**	**GA10**
Examines Voyager I and II as they were launched toward Jupiter and Saturn.			
PLANETARY DISCOVERIES	**30:00**	**7-12**	**GA11**
Views NASA technology during the years of 1979 and 1980.			
THE SHUTTLE ERA	**30:00**	**7-12**	**GA12**
Begins with the premier flight of the Shuttle Columbia in April 1982.			
SPACE SHUTTLE MATURES	**30:00**	**7-12**	**GA13**
Discusses how NASA maintained its momentum of achievement.			

MERCURY PROGRAM

	Run Time	Grade	Cat. #
THE ASTRONAUTS U. S. PROJECT MERCURY	**28:00**	**7-12**	**GB1**

Tells the story of the seven original U. S. astronauts.

VOYAGE OF FRIENDSHIP 7	**29:00**	**6-Adult**	**GB2**

Shows some flashbacks of the systems necessary to achieve man's dream of journeying into space.

AURORA 7	**29:00**	**6-Adult**	**GB3**

Points out the analogy between man's first flight at Kitty Hawk and manned orbital flight. This film records scientific experiments, star observations and Earth's horizon.

FLIGHT OF SIGMA 7	**28:00**	**6-Adult**	**GB4**

Shows the Sigma 7 briefing in Houston with astronaut "Wally" Schirra as commentator. The astronaut relates his experiences onboard the spacecraft, including the difficulties with the spacesuit.

FLIGHT OF FAITH 7	**28:00**	**6-Adult**	**GB5**

Depicts the final and longest one-man flight of Project Mercury.

PROJECT MERCURY SUMMATION	**29:00**	**6-Adult**	**GB6**

Discusses initial contract awards marking the birth of Project Mercury and contributions to the more advanced space flight programs.

TWELVE GEMINI	**15:00**	**6-Adult**	**GB7**

Summarizes the objectives and accomplishments of the Gemini Program, highlighting the 12 Gemini Missions.

APOLLO PROGRAM

	Run Time	Grade	Cat. #
THE TIME OF APOLLO	**28:00**	**4-Adult**	**GC1**

Discusses how in the year 1961, the President of the United States set forth the task, "This nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon, and returning him safely to Earth." This program is a tribute to this historical accomplishment.

	Run Time	Grade	Cat. #

FLIGHT OF APOLLO 7 **15:00** **6-Adult** **GC2**
Records life and work on the first unmanned flight of the Apollo series. Apollo 7 was designated to make the essential test of the Apollo spacecraft before the ambitious lunar-orbital mission could be attempted.

APOLLO 8: GO FOR TLI **22:30** **6-Adult** **GC3**
Features first voyage by man to another celestial body. Includes an obit around the Moon on Christmas.

APOLLO 9: THREE TO MAKE READY **17:00** **6-Adult** **GC4**
Stresses the testing of the Lunar Module, the spacecraft that will land man on the Moon.

APOLLO 10: TO SORT OUT UNKNOWNS **25:00** **6-Adult** **GC5**
Records the accomplishment of the basic mission of Apollo: to uncover and solve the few remaining problems before lunar landing.

THE FLIGHT OF APOLLO 11: FOR ALL MANKIND **34:00** **7-11** **GC6**
Shows the first landing of men on the Moon as the culmination of a dream.

APOLLO 12: PINPOINT FOR SCIENCE **28:00** **6-Adult** **GC7**
Records the second journey man made to the Moon. The first Extra-vehicular Activity (EVA) includes setting up ALSEP (Apollo Lunar Science Experiment Package) for the return of scientific data.

APOLLO 13: "HOUSTON, WE'VE GOT A PROBLEM" **28:00** **6-Adult** **GC8**
Depicts the dramatic voyage of Apollo 13. The most serious accident to occur in space changed the mission from a lunar landing to a desperate fight for crew survival.

APOLLO 14: MISSION TO FRA MAURO **28:00** **6-Adult** **GC9**
Includes the early problem of docking the Command and Lunar Modules, the landing on the Moon, the experiments package, the climb up Cone Crater, onboard experiments, scenes in the Lunar Receiving Laboratory and commentaries by noted scientists.

	Run Time	Grade	Cat. #

APOLLO 15: IN THE MOUNTAINS OF THE MOON — **28:00** — **6-Adult** — **GC10**
Features the stand up EVA, the three traverses of the lunar surface, film taken from the Lunar Rover, hammer and feather tests of Galileo's theory on falling objects in the gravity field, Worden' EVA, sub satellite launching, x-ray pulsar observations and splash down with one parachute collapsed.

APOLLO 16: NOTHING SO HIDDEN — **28:00** — **6-Adult** — **GC11**
Features an episode found in the "History of Space Travel" series.

APOLLO 17: ON THE SHOULDERS OF GIANTS — **28:00** — **6-Adult** — **GC12**
Views a documentary of the Apollo 17 journey to Taurus-Littrow, the final lunar landing mission in the Apollo program. The film depicts the highlights of the mission and then relates the Apollo program to Skylab, the Apollo/Soyuz link up and the Space Shuttle.

APOLLO MOONWALK SERIES

	Run Time	Grade	Cat. #

THE DAY BEFORE — **30:00** — **9-Adult** — **GD1**
Highlights the mood of the people that surrounded the long awaited Apollo 11 Mission. This unprecedented journey captured the heart of all America as well as the world.

ADAPTING TO A SPACE ENVIRONMENT — **30:00** — **4-Adult** — **GD2**
Discusses the testing procedures Apollo operators used to simulate the space environment to make sure the astronauts would survive outside of Earth's atmosphere. It also examines the function of the different stages of the Moon rocket.

ONE SMALL STEP — **30:00** — **4-Adult** — **GD3**
Looks at the magic Neil Armstrong created when he made that historical step on the Moon's surface. We listen to people from around the world voice their opinions about the success of the Apollo 11 mission and what it means to them.

THE MOON ON EARTH — **30:00** — **4-Adult** — **GD4**
Examines the research conducted by the scientists on the moon rocks after Apollo 11 returns to Earth. Studies reveal the different aspects of the moon's characteristics.

SKYLAB

	Run Time	Grade	Cat. #

SKYLAB: SPACE STATION I **28:00** **9-Adult** **GE1**
Reviews the repair operation of the first mission, proving man's presence is vital to successful space exploration. Shows medical experiment of man as he reacted under long-term weightlessness.

SKYLAB: THE SECOND MANNED MISSION, A SCIENTIFIC HARVEST **36:30** **9-Adult** **GE2**
Covers the Skylab launch activities and docking with unmanned SL-1 workshop. Includes observations of student experiments. Shows planet Earth documentation, manned operation of the Apollo Telescope mount for observations of the Sun and beyond, outside EVA activity, testing of the Astronauts Maneuvering Unit, experiments to explore industrial uses of space and the Skylab living routine.

THE FIRST 40 DAYS **25:00** **9-Adult** **GE3**
Records the launch of unmanned Skylab1 on May 14, 1973 and the major problem resulting from the loss of the meteoroid heat shield.

LEGACY OF SKYLAB **12:00** **9-Adult** **GE4**
Utilizes onboard photography from Skylab to provide visual indication of what life onboard the space station is like.

MAGNETISM IN SPACE **14:00** **9-Adult** **GE5**
Reviews familiar magnetic effects and applications of magnets on Earth and shows how these effects are observable in space, in new and different ways. Concludes with important present and future applications of magnetism in space.

MAGNETIC EFFECTS IN SPACE **14:00** **9-Adult** **GE6**
Discusses the Earth's magnetic field from Skylab.

FLUIDS IN WEIGHTLESSNESS **25:00** **9-Adult** **GE7**
Demonstrates unusual water drop behavior in weightlessness, behavior both mysterious in appearance and relevant in diverse fields of science and technology.

ZERO-G **15:00** **9-Adult** **GE8**
Provides an introduction to the Skylab environment, a laboratory above the Earth's atmosphere, effectively free from the Earth's gravitational field. Shows brief demonstrations of phenomena which can be observed only in Zero-G.

	Run Time	Grade	Cat. #

GYROSCOPES IN SPACE **15:00** **9-Adult** **GE9**
Illustrates the basic principles of gyroscopes by utilizing kinescope and other film footage from the Skylab in flight.

SPACE SHUTTLE

	Run Time	Grade	Cat. #

SPACEWATCH **28:00** **4-Adult** **GF1**
Features two children playing with a computer in their garage. They somehow find themselves at a space center ready to board the Space Shuttle.

SPACE SHUTTLE COLUMBIA
THE SECOND FLIGHT **28:00** **6-Adult** **GF2**
Examines preparation for Space Shuttle Columbia's second flight, the first time in space flight that a spacecraft was reused. Discusses the problems with the thermal tiles and high oil pressure readings. This tape also shows ground control coordination.

STS-3: ONE STEP CLOSER **26:00** **5-Adult** **GF3**
Discusses highlights of the third flight of the Space Shuttle Columbia to the press (Launch to Landing). Shuttle astronauts Jack Lousma and Gordon Fullerton provide commentary.

WE DELIVER **29:15** **4-Adult** **GF4**
Features Shuttle Missions STS-5, 6, 7, and 8. Shows pictures of two CTS satellites being deployed and a takeoff and landing of the Shuttle Columbia. STS-8 featured the first black astronaut to fly in space, space motion sickness experiments, diabetes research experiments, and an Indian CTS satellite being deployed.

OPENING NEW FRONTIERS **28:30** **4-10** **GF5**
Discusses an examination of Shuttle Columbia's fourth flight and problems encountered along the way. The Remote Manipulator System (RMS) and spacesuit for Extra-Vehicular Activity (EVA) are tested. Eating and sleeping and personal hygiene and exercises are looked at while in Zero-G along with experiments in the life sciences.

SPACE TRANSPORTATION
SYSTEM **16:00** **4-10** **GF6**
Shows good historical footage on first Columbia flight. Features different NASA centers testing parts of the Shuttle such as thermal tiles, main engine testing at Stennis Space Center, EMU and flight simulation tests.

	Run Time	Grade	Cat. #
ASTROSMILES	**24:00**	**4-Adult**	**GF7**

Consists of a collection of humorous moments from various Space Shuttle mission films.

THE SPACE SHUTTLE: AMERICA'S TEAM REACHING FOR THE FUTURE	**23:19**	**11-Adult**	**GF8**

Outlines how the NASA centers located throughout the United States contribute to the building of the Space Shuttle. Details the specific functions performed by each NASA facility.

LAUNCHING A DREAM	**14:00**	**K-Adult**	**GF9**

Shows how dreams can lead to discoveries and realities. Students of an elementary school role-play every aspect of "launching a Shuttle." Tasks performed by astronauts in space are replicated by students onboard a converted bus-turned-shuttle.

THE SPACE SHUTTLE: SPACELAB LIFE SCIENCE 1 & 2	**8:20**	**9-Adult**	**GF10**

Describes the Spacelab Life Sciences Shuttle missions dedicated to the study of immediate and long-term changes that occur in the human body during weightlessness.

SPACE STATION

	Run Time	Grade	Cat. #
SPACE STATION THE NEXT LOGICAL STEP	**15:00**	**4-12**	**GG1**

Stresses the need for a space station as the next logical step in space exploration. It examines the procedures for design and paths to construction of NASA's newest project.

SPACE STATION PART I	**52:00**	**6-Adult**	**GG2**

Discusses plans for research on the space station.

SPACE STATION PART II	**64:00**	**6-Adult**	**GG3**

Discusses additional plans for research on the space station.

	Run Time	Grade	Cat. #

INTERNATIONAL SPACE STATION OVERVIEW **11:00** **7-12** **GG4**

Discusses how research conducted on board the International Space Station will have many benefits for mankind. Outlines the role co-operating nations will play in the construction and maintenance of ISS. Also discusses station design and orbit.

INTERNATIONAL SPACE STATION VIDEO PROGRESS REPORT - A HOME IN SPACE **12:00** **7-12** **GG5**

Outlines the assembly and docking sequence of the completed flights of the International Space Station through July of 1999. Also touches upon the logistics of forthcoming missions as the assembly process continues through completion.

INTERNATIONAL SPACE STATION - GO FOR ASSEMBLY **11:00** **7-12** **GG6**

Contains interviews with many of the astronauts who will be assembling the International Space Station. Discusses new spacesuit and toll enhancements, the robotic arm and hand, neutral buoyancy training facilities at the Johnson Space Center, and the Crew Equipment Translation Assembly Cart which will help astronauts slide along the truss structure during station assembly.

INTERNATION SPACE STATION - SOME ASSEMBLY REQUIRED **60:00** **6-12** **GG7**

Shows astronaut training around the world, the basics of living and working in space, a look inside the ISS modules and how they work, current research in microgravity and the benefits for life on Earth. This program is a videotape of a live teleconference broadcast in February 1999.

INTERNATIONAL SPACE STATION - TELECONFERENCE COUNTDOWN TO LAUNCH **60:00** **6-12** **GG8**

Discusses space suit technology, underwater and virtual training, robotic tools that will be used in construction, how and why plants are grown in space and current research in microgravity that may lead to new medical therapies on Earth.

INTERNATIONAL SPACE STATION - CREW RETURN VEHICLE **5:00** **3-8** **GG9**

Looks at some of the key features of the International Space Station Crew Return Vehicle, the X-38. It highlights the parafoil parachute used for landing, the automated landing system and the shape and size of the spacecraft.

	Run Time	Grade	Cat. #

INTERNATIONAL SPACE STATION - POWER SYSTEMS **5:00** **3-8** **GG10**

Examines how electricity will be generated on the International Space Station. It will be powered by eight solar panels that collect energy from the sun through the use of photovoltaic cells.

INTERNATIONAL SPACE STATION - MEET ME AT THE STATION SERIES PROGRAM I **15:00** **4-8** **GG11**

Provides an overview of the International Space Station. Topics discussed include: the history of space stations, who is involved with the ISS project, what the ISS will be used for, dimensions, power supply and the teamwork involved in this multi-national program.

INTERNATIONAL SPACE STATION VIDEO PROGRESS REPORT OCTOBER 2000 **12:00** **7-12** **GG12**

Outlines the assembly and docking of the completed flights of the International Space Station through October 2000. Also touches upon the logistics of forthcoming missions as the assembly process continues through completion.

JOURNEY INTO CYBERSPACE

	Run Time	Grade	Cat. #
JOURNEY INTO CYBERSPACE INTRODUCTION	**37:00**	**5-8**	**H1**

Presents an informal review of the Journey into Cyberspace Series. Dr. Shelley Canright of the NASA Langley Research Center explains the materials and their dual focus: to stimulate career exploration and to provide science/math-related activities and concepts.

JOURNEY INTO CYBERSPACE TO THE UNIVERSITY OF VIRGINIA AND TO THE COLLEGE OF WILLIAM AND MARY	**46:00**	**5-8**	**H2**

Focuses on university students doing real world research. Covers a variety of careers in the areas of mathematics, science and engineering.

JOURNEY INTO CYBERSPACE TO VIRGINIA TECH, TO OLD DOMINION UNIVERSITY AND HAMPTON UNIVERSITY	**62:00**	**5-8**	**H3**

Focuses on university students doing real world research. Covers a variety of careers in the areas of mathematics, science and engineering. The university students also explain how their ordinary interests have led to extraordinary opportunities in high tech research and development.

LIFE SCIENCES

	Run Time	Grade	Cat. #

SPACE RESEARCH AND YOU:
YOUR HEALTH **15:00** **11-Adult** **I1**
Discusses how sending astronauts into space, orbiting spacecraft around the Earth, and sending probes to other planets has led to improved research by NASA on medical tools and new health practices.

SPACE RESEARCH AND YOU:
YOUR HOME ENVIRONMENT **15:00** **11-Adult** **I2**
Discusses protecting and improving the home environment.

SPACE LAB LIFE
SCIENCE 1 AND 2 **8:00** **9-Adult** **I3**
Describes some of the experiments conducted on Spacelab. Some of these experiments were cardiovascular and vestibular changes, immunology and blood anemia tests, and fluid loss.

LIFE? **14:30** **6-9** **I4**
Describes general characteristics of life with non-life similarities noted. A number of adaptations are included to show how life has adapted to Earth conditions and how certain individuals can withstand environmental insults.

ENDLESS VOYAGE **7:00** **4-12** **I5**
Views a student project "mock-up" of working in space, which takes place underwater.

EATING AND SLEEPING
IN SPACE **30:00** **4-12** **I6**
Discusses how astronauts eat and sleep onboard the Space shuttle. Narrated by Dr. Sally Ride.

LIFTOFF TO LEARNING VIDEO TAPES

	Run Time	Grade	Cat. #

LIFTOFF TO LEARNING SERIES **2 HRS.** **6-Adult** **J1**
Consists of Space Basics, Go for Eva, Newton in Space, All Systems Go, Atmosphere Below, and Voyage of Endeavor.

NEWTON IN SPACE **12:35** **6-8** **J2**
Demonstrates the importance of Newton's Laws of Motion to space flight. Orbital scenes were taken during STS-39 mission.

SPACE BASICS **22:00** **6-8** **J3**
Discusses how astronauts aboard Shuttle mission STS-41 use computer graphics and visual demonstrations to answer three basic questions about space flight.

GO FOR EVA **14:00** **6-8** **J4**
Discusses the reasons for wearing spacesuits during space walking missions, how spacesuits work and what kind of jobs astronauts perform while space walking.

SPACELAB LIFE SCIENCES MISSIONS 1 AND 2 **22:00** **9-Adult** **J5**
Describes the Spacelab Life Sciences shuttle missions dedicated to the study of immediate and long-term changes that occur in the human body during weightlessness. Outlines many of the experiments to be performed.

ATMOSPHERE BELOW **16:00** **6-8** **J6**
Discusses how changes in the Earth's atmosphere are investigated from outer space onboard the shuttle using the Atmospheric Laboratory for Applications and Science (ATLAS 1).

ALL SYSTEMS GO **34:00** **6-8** **J7**
Discusses some of the physiological changes that occur in the human body while in a microgravity environment. Astronauts in orbit during the Spacelab Life Sciences-1 mission are in this film.

VOYAGE OF ENDEAVOR THEN AND NOW **20:00** **6-8** **J8**
Compares the vessels and voyages of the sea-going "Endeavor." Orbital scenes were taken during the STS-49 mission in May of 1992.

	Run Time	Grade	Cat. #

LIVING IN SPACE **10:00** **K-3** **J9**
Describes and compares the daily routine of living on board the Space Shuttle.

FROM UNDERSEA TO OUTERSPACE **15:00** **5-9** **J10**
Describes a life science experiment using jellyfish. Because of their small and rapid growth cycle, results of the experiment have provided scientists with a unique window into the process of living things adapting to microgravity.

TETHERED SATELLITE FORCES AND MOTION **21:11** **9-12** **J11**
Demonstrates and explains the application of forces and motion as they relate to tethered satellite deployment.

IMAGES OF EARTH AND SPACE **18:00** **3-12** **J12**
Shows colorful scientific visualizations of natural and physical phenomena.

MAKING LIGHT WORK **19:00** **5-12** **J13**
Discusses research with light.

MATHEMATICS OF SPACE RENDEZVOUS **17:00** **5-12** **J14**
Demonstrates the mathematical operations needed to enable the crew of STS-84 to rendezvous with the Russian Mir Space Station.

GEOGRAPHY FROM SPACE **15:00** **K-8** **J15**
Takes the viewer on a rapid tour of Earth's surface as seen from outer space. After explaining how the altitude of the viewer affects the amount of Earth's surface seen at one time, the video moves on to some of the interesting features of Earth's continents as seen from space. Because the inclination of the Space Shuttle's orbit to Earth's equator did not carry the crew over Antarctica or the Arctic, these are not visited in the program.

PLANTS IN SPACE **13:00** **5-12** **J16**
Shows students at an elementary school participating in an experiment on plant growth. This experiment was conducted with Space Shuttle astronauts. A video resource guide is available to provide data on the experimental plants grown in space.

LET'S TALK ROBOTICS **14:00** **5-12** **J17**
Introduces the use of robotics in space exploration. Astronauts demonstrate robotic arms and free-flying cameras on the Space Shuttle. Viewers also get to see some of NASA's robotics laboratories.

LIVE FROM MARS

	Run Time	Grade	Cat. #
LIVE FROM MARS TEACHER RESOURCE TAPE	**60:00**	**Adult**	**K1**

Contains a variety of sequences from a number of different sources. This videotape is meant to provide content background to educators who wish to implement the "Live From Mars" electronic field trips using the video programs listed below.

	Run Time	Grade	Cat. #
LIVE FROM MARS COUNTDOWN	**60:00**	**Adult**	**K2**

Gives behind the scenes at Cape Canaveral, the launch of Mars Global Surveyor, and final preparation of the Mars Pathfinder spacecraft.

	Run Time	Grade	Cat. #
LIVE FROM MARS DESTINATION MARS	**33:30**	**4-Adult**	**K3**

Depicts the first human mission to Mars in 2018. This is a fun video. The story is told by the mission astronauts as they record entries in their journals.

LIVING AND WORKING IN SPACE

	Run Time	Grade	Cat. #

TOYS IN SPACE **60:00** **4-Adult** **L1**
Shows different toys in action both on Earth and on the Space Shuttle. Toys such as slinkies, yo-yo's, gyroscopes and jacks demonstrate the effects of microgravity and the law of physics.

TOYS IN SPACE I **16:38** **4-8** **L2**
Shows how children are given the opportunity to predict how toys will function in space. Astronauts took the same toys into space in 1985.

TOYS IN SPACE II **37:50** **K-12** **L3**
Demonstrates the actions of a variety of children's toys in microgravity.

NASA SPACE SUIT **15:00** **7-Adult** **L4**
Examines the evolution and design of the NASA spacesuit from a 1930 pressure suit used by aviator Wiley Post to the current extravehicular maneuvering unit used on the Space Shuttle.

MATERIALS IN SPACE **7:00** **6-Adult** **L5**
Shows the application of material processing during the STS-43 mission. Crew commander John Blaha took some time to speak to students.

LAUNCHING THE SCHOOL YEAR WITH PRESIDENT BUSH **60:00** **3-6** **L6**
Shows President George Bush and NASA Administrator Richard Truly teaching a unique math and science lesson aimed at elementary level students. Third and fourth graders from Washington, D. C. and LaPorte, Texas ask the President questions and learn about living and working in space.

LIVING IN SPACE **11:00** **K-6** **L7**
Discusses the daily routine of living onboard the Space Shuttle as compared to living on Earth.

MATHEMATICS

PROJECT MATHEMATICS

	Run Time	Grade	Cat. #
THE STORY OF PI	**30:00**	**9-12**	**M1**

Explains the story of Pi with computer animation. The tape weaves a historical perspective showing how the number Pi (the ratio of the circumference to the diameter of any circle) appears in formulas for round objects and in contexts that seem to have no relation to geometry.

SIMILARITY	**25:00**	**9-12**	**M2**

Explains Similarity with computer animation. Shows example of similar objects from real life. Introduces scaling, the basis of all measurement and shows its use in geometry, science and technology.

POLYNOMIALS	**30:00**	**9-12**	**M3**

Opens by showing examples of polynomial curves that appear in real life followed by a systematic description of polynomials by degree. Uses computer animation to discuss lines, quadratic and cubic polynomials and addresses the intersections of lines and parabolas.

SPACE FLIGHT: THE APPLICATION OF ORBITAL MECHANICS	**35:00**	**9-12**	**M4**

Details the explanation of planetary motion or orbital mechanics. Following a brief look at early theories of planetary orbits, animation is used to illustrate various mathematical equations and theories including Kepler's Laws of Planetary Motion and Newton's Laws of Motion. Explains many terms associated with orbits including perigee, apogee, eccentricity, orbital inclination, launch window, etc.

SINES AND COSINES PART I	**30:00**	**9-12**	**M5**

Uses computer animation to give examples of the theory behind Sine and Cosine and their uses.

SINES AND COSINES PART II	**30:00**	**9-12**	**M6**

Continues with examples of the theory behind Sine and Cosine and their uses.

SINES AND COSINES PART III	**30:00**	**9-12**	**M7**

Uses computer animation to continue explaining the theory behind Sine and Cosine and their uses.

	Run Time	Grade	Cat. #
THE THEOREM OF PYTHAGORAS	**21:12**	**9-12**	**M8**

Takes the commonly known theorem and treats it with computer animation and makes it easy to understand.

THE TUNNEL OF SAMOS	**30:00**	**9-12**	**M9**

Begins with a brief review of prerequisites dealing with a property of similar triangles introduced in a previous module on Similarity. The Tunnel of Samos module tells the story of one of the greatest engineering feats of the ancient world.

MICROGRAVITY

	Run Time	Grade	Cat. #
THE "GEE" IN MICROGRAVITY	**60:00**	**4-Adult**	**N1**

Discusses activities dealing with microgravity.

UNITED STATES MICROGRAVITY LAB 2	**41:10**	**5-12**	**N2**

Describes experiments with the astronauts aboard the Space Shuttle.

A PITCH FOR MICROGRAVITY	**55:30**	**5-12**	**N3**

Includes chemistry, physical science and mathematics activities participants used via Spacelink. This tape is a video conference tape.

MICROGRAVITY	**23:24**	**5-12**	**N4**

Deals with the nature of microgravity, different ways of creating microgravity, and the four scientific disciplines in NASA's microgravity research program. Astronaut Jan Davis narrates this program.

THE MICROGRAVITY DEMONSTRATOR	**21:00**	**5-12**	**N5**

Introduces a series of demonstrations used to provide a dramatically visual, physical connection between free-fall and microgravity conditions and to understand why various types of experiments are performed under microgravity conditions. The Microgravity Demonstrator is a tool to create microgravity conditions in your classroom.

MISCELLANEOUS

	Run Time	Grade	Cat. #

TRASHING THE OCEAN **7:30** **6-12** **O1**
Shows current film depicting repercussions of plastic pollution in sea life. Graphic footage shows what is happening to our natural resources as well as sea life due to the carelessness of crews of sea going vessels.

QUEST **4:30** **6-12** **O2**
Represents a musical montage of events from the wonderful world of NASA that is illustrated through still photography, computer animation and short film clips.

SUNSPLASH OZONE VIDEO **8:00** **9-12** **O3**
Uses computer graphics and animation to illustrate ozone depletion. Explains how ozone in the stratosphere protects us from ultraviolet radiation and demonstrates how chlorofluorocarbons (CFC's) cause destruction of Earth's protective ozone layer.

ASTRONOMY VILLAGE **17:30** **5-12** **O4**
Teaches the Macintosh CD titled Astronomy Village.

GLACIER BAY, ALASKA FROM THE GROUND, AIR AND SPACE **13:00** **5-12** **O5**
Highlights the fact that satellite data can be used to measure glacier changes from space and that remote sensing can extend the records of historical ground-based measurements to the present.

LOUISIANA: GATEWAY TO THE STARS **30:00** **K-12** **O6**
Introduces the men and women of Louisiana who have made America's human space program a success.

THE GLOBE PROGRAM **9:53** **K-12** **O7**
Highlights Vice President Gore's GLOBE Program. GLOBE is a worldwide science and education program coordinating the work of students, teachers and scientists to study and understand the global environment.

NASA

NASA BIOLOGY ON EARTH AND IN SPACE

	Run Time	Grade	Cat. #
LIFE IN SPACE	**27:30**	**10-Adult**	**P1**
Highlights the history of space flight.			
GRAVITY AND LIFE	**27:30**	**10-Adult**	**P2**
Explains the role of gravity in the development of life.			
MAKING MEDICINE IN SPACE	**27:31**	**10-Adult**	**P3**
Tells us how medicine possibly can be made economically in space.			
EARTH'S AIR	**27:03**	**10-Adult**	**P4**
Talks about the Earth's atmosphere, its composition, and how it changed over geological time.			
EARTH'S FUTURE CLIMATE	**27:03**	**10-Adult**	**P5**
Discusses how Earth's carbon dioxide cycle may lead to a "greenhouse" effect on Earth.			
ORIGINS OF LIFE ON EARTH	**27:27**	**10-Adult**	**P6**
Describes possible origins of life on Earth.			
EXOBIOLOGY	**27:27**	**10-Adult**	**P7**
Discusses problems which human beings may face during long space flights.			
THE HUMAN MACHINE IN SPACE	**28:00**	**10-Adult**	**P8**
Discusses how the human organism functions during space travel.			
THE VIKING EXPEDITIONS	**27:40**	**10-Adult**	**P9**
Describes how unmanned missions to Mars looked for life.			
THE MARS PANEL DISCUSSION I	**26:25**	**10-Adult**	**P10**
Discusses further possible exploration of Mars.			
THE MARS PANEL DISCUSSION II	**26:25**	**10-Adult**	**P11**
Continues further discussion on possible exploration of Mars.			

	Run Time	Grade	Cat. #
SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE	**27:23**	**10-Adult**	**P12**

Describes the NASA program to listen to radio signals from space for clues of extraterrestrial intelligence.

PLANNING FOR THE FUTURE	**27:00**	**10-Adult**	**P13**

Discusses NASA long-range plans.

SPACE POLICY	**27:20**	**10-Adult**	**P14**

Discusses the topic of space policy and its implications.

NASA CONNECT VIDEO SERIES

	Run Time	Grade	Cat. #
TEACHER GUIDE FOR CONNECT VIDEO SERIES GRADES K-4	**30:00**	**K-4**	**PA1**

Provides the teacher with information about the Connect Video Series on math and science.

TEACHER GUIDE FOR CONNECT VIDEO SERIES GRADES 5-8	**30:00**	**5-8**	**PA2**

Provides the teacher with information about the Connect Video Series on math and science.

TAPE 1 PROGRAM 1 FLIGHT DIRECTION	**30:00**	**K-4**	**PA3**

Teaches students how research teams of NASA engineers, technicians and pilots must work together to complete large projects involving airplanes. This video will allow you to observe students from McIntosh Elementary School (Newport News, VA) as they conduct a paper airplane experiment in which different flight conditions are tested and changed.

	Run Time	Grade	Cat. #

TAPE 1
PROGRAM 2
PLANETARY LANDERS **30:00** **K-4** **PA3**
Instructs students on exploring the design considerations that go into constructing a planetary lander and also examining the mathematics behind the landing process. They will observe students conducting an experiment to investigate mass and velocity, in which different objects are dropped onto a "martian" surface.

TAPE 1
PROGRAM 1
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TAPE 2
PROGRAM 1
EARTH FROM SPACE **30:00** **K-4** **PA5**
Discusses how scientists have used satellites to study the impact of human activities on the global climate and the mathematics behind the collected data from the space-based instruments to study Earth's environment. Students will observe featured student "researchers" from the Portsmouth Public Schools (Portsmouth, VA) conducting an experiment to investigate the differences in distances traveled by rubber-band rockets when the launch angle and the amount of force vary.

TAPE 2
PROGRAM 2
DOING MORE IN LESS **30:00** **K-4** **PA5**
Explores the concept of microgravity. Students will observe featured student "researchers" from the Williamsburg-James City Schools and the York County Schools conducting an experiment to investigate the effects of varying the amount of fuel (fizzing antacid tablets) to the difference in time from fuel ignition to landing.

	Run Time	Grade	Cat. #

TAPE 2
PROGRAM 1
EARTH FROM SPACE **30:00** **5-8** **PA6**
Discusses how scientists have used satellites to study the impact of human activities on the global climate and the mathematics behind the collected data from the space-based instruments to study Earth's environment. Students will observe featured student "researchers" from the Portsmouth Public Schools (Portsmouth, VA) conducting an experiment to investigate the differences in distances traveled by rubber-band rockets when the launch angle and the amount of force vary.

TAPE 2
PROGRAM 2
DOING MORE IN LESS **30:00** **5-8** **PA6**
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PLANE WEATHER **30:00** **5-12** **PA7**
Involves students in the examination of aviation safety. Introduces students to the math and science behind aviation weather and demonstrates how meteorological conditions such as icing influence flight.

SHAPES OF FLIGHT **30:00** **4-8** **PA8**
Involves students in the examination of the interaction between mathematics, science, and technology as they look at the process of airplane design.

WHEREVER YOU GO,
THERE YOU ARE **30:00** **4-8** **PA9**
Introduces students to the science of navigation and involves them in observing, measuring and interpreting data to determine exact locations. They will learn how Global Positioning Satellites (GPS) now make navigation much easier and safer for civil, commercial and military pilots.

RECIPES FOR THE FUTURE **30:00** **4-8** **PA10**
Focuses on the physical properties of materials, mixtures and compounds. Students are introduced to the various measuring and testing techniques used to develop "composite" materials for airplanes and space vehicles.

QUIETING THE SKIES **30:00** **4-8** **PA11**
Introduces students to the science of sound and involves students in observing, measuring, and interpreting data to determine what sound is, how sound travels, and how to control sound. NASA researchers will show students how math and science are applied in the research to control aircraft noise.

	Run Time	Grade	Cat. #

TOOLS OF THE AERONAUTICS TRADE **30:00** **4-8** **PA12**
Explores the concept of measurement and the tools used in measuring things, while learning "what" and "how" engineers and scientists use measurement during the process of developing, designing and testing airplanes.

ATMOSPHERIC DETECTIVES **30:00** **4-8** **PA13**
Discusses how scientists use satellites, lasers, optical detectors, and wavelengths of light to measure the presence of certain gaseous elements, compounds, and aerosols in the Earth's atmosphere.

GEOMETRY OF EXPLORATION: WATER BELOW THE SURFACE OF MARS? **30:00** **4-8** **PA14**
Discusses how geometry, geometric shapes and navigation are used to explore Mars. They will join NASA engineers and scientists who seek to answer the age-old question, "Is there water below the Martian surface?"

GEOMETRY OF EXPLORATION: EYES OVER MARS **30:00** **4-8** **PA15**
Examines how the principles of geometry and linear and angular measurements are used to survey and map the Earth and planets such as Mars.

PROPORTIONALITY: THE X-PLANE GENERATION **30:00** **4-8** **PA16**
Discusses why scaling and proportion are important factors in spacecraft design.

PROPORTIONALITY: MODELING THE FUTURE **30:00** **4-8** **PA17**
Examines how patterns, measurement, ratios and proportions are used in the research, development, and production of airplanes.

ALGEBRA: MIRROR, MIRROR ON THE UNIVERSE **30:00** **4-8** **PA18**
Discusses how algebra is used to explore the universe.

MEASUREMENT, RATIOS, AND GRAPHING **30:00** **5-8** **PA19**
Teaches students how NASA researchers measure and collect data, develop ratios and graphs to analyze their data, compare their results, and predict possible solutions for their real-world problems. Students will learn the history of the National Aeronautics and Space Administration.

	Run Time	Grade	Cat. #
GEOMETRY AND ALGEBRA:			
GLOW WITH THE FLOW	**30:00**	**5-8**	**PA20**

Teaches about the force of drag and how NASA engineers use models and glowing paints to see how air flows over vehicles in a wind tunnel. Students will also discover how the blended wing body (BSB), a concept super jumbo jet that resembles a flying wing, will affect air travelers of the future. Students will also observe NASA engineers using geometry and algebra when they measure and design models to be tested in tunnels.

NASA ON THE CUTTING EDGE

	Run Time	Grade	Cat. #
THE "GEE" IN MICROGRAVITY	**60:00**	**4-12**	**PB1**

Discusses activities dealing with microgravity.

ROBOTICS	**60:00**	**9-12**	**PB2**

Discusses how NASA uses robotics.

FIRE AND LIFE: THE SUN-EARTH CONNECTION	**60:00**	**5-12**	**PB3**

Discusses how solar orbiters are exploring our star -- the only one for which we have evidence of a life-supporting satellite.

SMALL BODIES, BIG IMPACT TAPE 1 - PROGRAM 1: COOL COMETS	**30:00**	**5-8**	**PB4**

Looks at the dirty snowballs which turn into the beautiful celestial bodies we can see from Earth. Viewers will go behind the scenes to discover high-tech NASA missions that will capture comet dust sample and bring them back to Earth.

SMALL BODIES, BIG IMPACT TAPE 1 - PROGRAM 2: AWESOME ASTEROIDS	**30:00**	**5-8**	**PB4**

Looks at the rocky bodies we call asteroids, one of which may have caused the extinction of the dinosaurs. Viewers will learn about space missions to orbit and map a near-Earth asteroid for the first time, helping to reveal clues about the formation of our solar system.

OUR WATER PLANET FROM SPACE TAPE 1 PROGRAM 1 OCEANS IN MOTION	**30:00**	**5-12**	**PB5**

Explains how ocean circulation not only affects life in the oceans but also weather and climate around the world. Also examines how NASA and its partners use the vantage point of space to measure ocean height, winds and temperature.

	Run Time	Grade	Cat. #

OUR WATER PLANET FROM SPACE
TAPE 1 PROGRAM 2
THE COLOR OF OCEANS **30:00** **5-12** **PB5**
Illustrates the ocean's many shades of blue, green and red. This spectrum of color tells us a lot about the health of our oceans that affects life on Earth.

THE WHOLE WORLD IN
YOUR HANDS **60:00** **5-12** **PB6**
Discusses NASA's Earth Observing System (EOS). The EOS is an array of global observation satellites that process, archive, manage and distribute instrument data using one of the most complex computer networks ever developed.

NASA "WHY?" FILES

	Run Time	Grade	Cat. #

THE CASE OF THE UNKNOWN
STINK **60:00** **3-5** **PC1**
Invites students to join the tree house detectives as they investigate "The Case of the Unknown Stink." The tree house detectives accept the challenge of trying to find the source of an unpleasant odor that is invading surrounding neighborhoods. Detectives learn about the sense of smell.

THE CASE OF THE
BARKING DOGS **60:00** **3-5** **PC2**
Invites students to investigate the "Case of the Barking Dogs." The tree house detectives accept the challenge of trying to find out why the neighborhood dogs have unexpectedly started barking early in the morning and late at night. Students learn the use of logic and sound reasoning.

THE CASE OF THE
ELECTRICAL MYSTERY **60:00** **3-5** **PC3**
Invites students to join the tree house detectives as they investigate “The Case of the Electrical Mystery.” Why is the electricity on in the tree house and why is the electricity off in all the houses on their block? In solving this case, our detectives learn about electricity and how it is generated. They also learn about electrical current, circuits, and distribution.

SATELLITES

	Run Time	Grade	Cat. #

GROWING CONCERNS **14:30** **10-Adult** **Q1**
Introduces the Landsat satellite as a partial solution to the world's need to survey and monitor agricultural resources. The satellite's imagery is being used experimentally to supplement U. S. ground surveys in an effort to increase the accuracy of estimates of crop production and inventory.

LANDSAT: THE POLLUTION SOLUTION **14:30** **9-12** **Q2**
Discusses how Landsat's remote sensing capabilities can aid in resolving environmental quality problems. Experiments have shown that the satellite can locate strip-mining operations to facilitate land reclamation programs.

THE WET LOOK **15:00** **9-12** **Q3**
Explores Landsat's remote sensing capability and how it helps solve water resource problems. Landsat provides information to hydrologists about snowfall in the mountains, enabling them to estimate the basic water supply available to western states and predict spring run-off and flooding.

PORTRAIT OF EARTH: THE STORY OF SATELLITES **28:00** **4-8** **Q4**
Traces the evolution of satellite technology from Echo, Telestar and Early Birds to ATS-6, Landsat at SBS.

VEGETATION ASSESSMENT **30:00** **11-Adult** **Q5**
Discusses a series of advisory meetings between Earth Resources Observations Systems (EROS) scientists and fictitious power company officials who use remote satellites. Remote sensing a route across the state of South Dakota for a power line in depicted in this program.

MINERAL EXPLORATION **28:29** **11-Adult** **Q6**
Examines uses of remotely sensed data in mineral exploration, and focuses on finding the most promising locations for mining.

LAND FOR PEOPLE… LAND FOR BEARS **15:00** **6-12** **Q7**
Looks at how the Landsat satellite supplies a new kind of data for land-use mapping and wildlife mapping.

	Run Time	Grade	Cat. #

BEYOND THE CLOUDS **12:10** **6-12** **Q8**
Describes NASA's Upper Atmosphere Research Sattelite (UARS) which is designed to investigate the state of Earth's upper atmosphere and the interactions within it. The satellite will help researchers understand long term changes that may be taking place in our atmosphere and what we can do to lessen their adverse effects upon life on Earth.

LANDSAT:
15 YEARS OF LEARNING **8:00** **9-Adult** **Q9**
Looks at the history of the Landsat satellite and how it helps scientists study Earth's environment.

GLACIER BAY, ALASKA
FROM THE GROUND, AIR
AND SPACE **13:00** **5-12** **Q10**
Highlights the fact that satellite data can be used to measure glacier changes from space and that remote sensing can extend the records of historical ground-based measurements to the present.

SPACE ART

	Run Time	Grade	Cat. #
VISIONS OF OTHER WORLDS	**28:00**	**10-12**	**R1**

Explores the work of 27 leading science fiction/science fact artists, including former astronaut Alan Bean and the first artist to travel in space.

SPACE EXPLORATION

	Run Time	Grade	Cat. #
THE HUBBLE SPACE TELESCOPE	**18:00**	**9-Adult**	**S1**

Looks at how the Hubble Space Telescope will examine some of the mysteries of our universe, including stellar evolution, expansion of the universe, supernovae, and quasars.

THE COSMIC BACKGROUND EXPLORER	**13:00**	**9-Adult**	**S2**

Discusses "Big Bang" and other theories regarding the origin of the universe. The COBE explorer is used to study cosmic background radiation.

NASA'S HUBBLE SPACE TELESCOPE: THE CHALLENGE & COMPLEXITY OF	**18:00**	**11-Adult**	**S3**

Details how NASA uses scientists, researchers, and engineers throughout the world to meet the challenge of monitoring and maintaining the Hubble Space Telescope. Touches on procedures for sending commands to the telescope, archiving distributing data and scheduling observations time.

AND THEN THERE WAS VOYAGER	**30:00**	**11-Adult**	**S4**

Uses interviews with NASA scientists and computer graphics to highlight the major discoveries the Voyager spacecraft made about Jupiter, Saturn, Uranus, Neptune and their satellites. Chronicles the Voyager Missions actual network newscasts.

EARTH SYMPHONY	**29:00**	**11-Adult**	**S5**

Displays pictures of aerial photography taken from the Landsat satellite set to the music of Vivaldi's, The Four Seasons. Also contains footage of various shuttle flights set to music.

SENTINELS IN SPACE	**29:00**	**9-12**	**S6**

Explains how satellites monitor Earth conditions. This is a National Oceanic and Atmospheric Administration (NOAA) film.

STARDUST - BRINGING COSMIC HISTORY TO EARTH	**8:00**	**9-12**	**S7**

Reviews the STARDUST Mission which plans to fly a spacecraft to the comet WILD 2, capture particles and return them to Earth. This 3D animated video follows the STARDUST mission for launch to the wondrous re-entry to Earth.

	Run Time	Grade	Cat. #
HUBBLE: THE FIRST DECADE CLOSED CAPTIONED	**8:00**	**5-12**	**S8**

Highlights Hubble's most significant contributions to astronomy and the world. Starting with the deployment of the Hubble to the repair missions and on to how the Hubble Space Telescope has become a "Black Hole Hunter" finding super massive black holes throughout the galaxies.

SPACE SCIENCES

ASTRONOMY

	Run Time	Grade	Cat. #
COMET HALLEY RETURNS	**29:00**	**11-Adult**	**T1**

Examines comets in an effort to learn more about the origin of our solar system.

EXPLORING THE X-RAY UNIVERSE	**12:00**	**K-12**	**T2**

Discusses the development of X-ray sources in the universe: X-ray galaxies, X-ray stars, neutron stars and black holes.

SPACE CLASSROOM: ASSIGNMENT THE STARS	**27:00**	**6-8**	**T3**

Uses music and special effects to convey both the educational content and excitement of the original Space Classroom event that occurred in December 1990. The NASA educational effort brought the crew of the orbiting Astro-1 mission and groups of middle school students together to teach concepts of the electromagnetic spectrum and show how they relate to an astronomy mission in space.

SUPERNOVA II	**10:00**	**11-Adult**	**T4**

Describes the recent discovery of Supernova SN 1987a on February 23, 1987. A NASA scientist explains how natural nucleosynthesis (formation of heavy elements) occur, when a supernova is formed, and how studying the death of stars will help explain the origin of the universe.

SPACE SCIENCES - SUN	**7:00**	**6-10**	**T5**

Describes an expedition over the sun's poles.

STARFINDER SERIES TAPE 1	**60:00**	**6-10**	**T6**

Discusses the following topics: making sense of data, pictures from numbers, why a space telescope, and the expanding universe.

STARFINDER SERIES TAPE 2	**60:00**	**6-10**	**T7**

Discusses the following topics: laws of motion, how big is the universe, gravity in space, and orbital motion.

STARFINDER SERIES TAPE 3	**60:00**	**6-10**	**T8**

Discusses the following topics: gravity and weight, fusion and energy, evolution of a star, and tapping the sun's power.

	Run Time	Grade	Cat. #

STARFINDER SERIES TAPE 4 **60:00** **6-10** **T9**
Discusses the following topics: energy transfer, rotational energy, the nature of light, and earthbound telescopes.

STARFINDER SERIES TAPE 5 **60:00** **6-10** **T10**
Discusses the following topics: the Hubble instruments, density of matter, ancient astronomers, and the constellations.

STARFINDER SERIES TAPE 6 **60:00** **6-10** **T11**
Discusses the following topics: using the celestial sphere, magnetic fields, electromagnetic radiation, and fingerprints of light.

STARFINDER SERIES TAPE 7 **60:00** **6-10** **T12**
Discusses the following topics: solar system part one and two, conservation, energy and matter and pulsars and quasars.

STARFINDER SERIES TAPE 8 **60:00** **6-10** **T13**
Discusses the following topics: diffraction and cosmology.

STAR HUSTLER **60:00** **6-12** **T14**
Reports monthly on what is happening to the stars and planets during a given week of the month. Tapes are received on a monthly basis and may be ordered each month.

COMET CHASERS: ON THE TRAIL OF A COMET **78:00** **9-Adult** **T15**
Focuses on a live conference celebrating the Comet Hale-Bopp flyby. The main focus of this program is a panel discussion with astronomers Alan Hale, Thomas Bopp, David Levy and Don Yeomans.

SECURITY BRIEFING FOR THE LUNAR METEORITE LOAN PROGRAM **9:30** **5-12** **T16**
Discusses the steps for obtaining the lunar and meteorite samples for use in the classroom.

SPACE SCIENCE

EXTRATERRESTRIAL INTELLIGENCE

	Run Time	Grade	Cat. #
QUEST FOR LIFE, WHO'S OUT THERE?	**28:30**	**10-12**	**TA1**

Introduces Orson Welles as the host of this extraordinary half-hour program. A number of distinguished scientists conclude that there is someone in outer space.

IN SEARCH OF OTHERS	**15:00**	**10-Adult**	**TA2**

Discusses how NASA continues to search for extraterrestrial life with the use of space probes.

SPACE SCIENCE

JOURNEY THROUGH THE SOLAR SYSTEM

	Run Time	Grade	Cat. #
OUR STAR THE SUN	**30:00**	**7-12**	**TB1**

Examines pictures and observations from three Skylab missions of the 1970's. Analyses of the atmosphere, temperature, density, chemical composition, physics and magnetic fields of the sun are presented.

MERCURY, EXPLORATION OF A PLANET	**30:00**	**7-12**	**TB2**

Shows excerpts from the NASA film, "Mercury, Exploration of a Planet," which uses animation and photography to depict the flight of the Mariner spacecraft to Venus and Mercury. Also includes a NASA program, Our Solar System, suitable for primary grades.

VENUS PIONEER	**30:00**	**7-12**	**TB3**

Documents the early Pioneer missions to Venus in the late 70's through a series of animation, NASA photographs and interviews with project scientists. Highlights some early discoveries about the planet's atmosphere and surface features.

	Run Time	Grade	Cat. #

EARTH, THE PLANET **30:00** **7-12** **TB4**
Examines Earth from the vantage point of space. Its atmosphere and magnetic fields are described. A view of the world through the eyes of the Landsat observation satellite is also presented.

ASSIGNMENT - SHOOT FOR THE MOON **30:00** **7-12** **TB5**
Illustrates how the moon was surveyed by machines prior to man's first lunar landing.

THE MOON AND MAN **30:00** **7-12** **TB6**
Shows segment from a compilation of historic NASA films documenting many of the manned expeditions to the moon.

THE FOURTH PLANET **30:00** **7-12** **TB7**
Shows how information gleaned from space missions began to separate fact from fiction. Mars has been the setting for many tales of science fiction.

LIFE ON MARS? **30:00** **7-12** **TB8**
Describes the experiments conducted on the martian surface in search for life.

JUPITER ODYSSEY **30:00** **7-12** **TB9**
Summarizes the Pioneer 10 results and highlights pictures of the largest planet in the solar system.

JUPITER: A CLEARER PICTURE **30:00** **7-12** **TB10**
Reveals fascinating findings about the moons of Jupiter as a result of data collected by the Voyager spacecraft.

PIONEER: SATURN ENCOUNTER **30:00** **7-12** **TB11**
Views of Jupiter and Saturn from the Pioneer spacecraft.

VOYAGER 2/SATURN ENCOUNTER **30:00** **7-12** **TB12**
Highlights live television coverage from the Voyager 2 spacecraft's close encounter with Saturn.

URANUS, NEPTUNE PLUTO AND BEYOND **30:00** **7-12** **TB13**
Presents theories about the structure and nature of the three outer planets, comets, and asteroids. Spacecraft messages to "anybody out there" are reviewed.

SPACE SCIENCES

LIFE IN THE UNIVERSE

	Run Time	Grade	Cat. #
THE INGREDIENTS OF SPACE TRAVEL	**30:00**	**11-Adult**	**TC1**

Stresses the need for regenerative systems for space travel. Regenerative systems for water and oxygen are explained in detail.

BETWEEN THE ATOM AND THE STAR	**30:00**	**11-Adult**	**TC2**

Investigates gravity and its effect on man. Biologists explain the kinds of experiments that were to be done on the Earth orbiting biosatellite.

ZERO-G AND SPACESUITS	**30:00**	**4-Adult**	**TC3**

Describes the spacesuit worn by the Apollo astronauts.

PROJECT MERCURY: AN EARLY STEP	**30:00**	**4-Adult**	**TC4**

Summarizes the project Mercury flights of the 1960's. Shows the designing and building of the spacecraft, the training of the seven original astronauts, the MR-2 launch with the chimp HAM, and highlights of Alan Shepard's first flight, as well as the flights of other Mercury astronauts.

GEMINI SCIENCE	**30:00**	**4-Adult**	**TC5**

Explains life science experiments developed for the Gemini missions. Includes a brief synopsis of the missions.

LIFE ON THE MOON?	**30:00**	**4-Adult**	**TC6**

Focuses on the importance and function of the Lunar Receiving Lab. Moon rocks and soil samples are taken to the Lunar Receiving Lab in Houston where vast amounts of geological and botanical work is done to determine if the moon will sustain life.

OUR LABORATORIES IN SPACE	**30:00**	**4-Adult**	**TC7**

Examines some of the scientific and medical experiments that were completed on Skylab, the Apollo-SOYUZ Test Project and future experiments to be conducted on the Space Shuttle.

EXAMINATION OF LIFE	**30:00**	**4-Adult**	**TC8**

Focuses on university and NASA scientists of the 1960s exploring the origin of life.

	Run Time	Grade	Cat. #
LIFE ELSEWHERE?	**30:00**	**4-Adult**	**TC9**

Explores the possibility of life on other planets.

LIFE ON THREE PLANETS BEYOND EARTH	**30:00**	**4-Adult**	**TC10**

Explores the possibility of life on Jupiter, Venus and Mars.

UNIVERSE	**30:00**	**4-Adult**	**TC11**

Examines the planets with emphasis on Mars and Jupiter. Proceeds to explore our solar system, including galaxies, nebulae, pulsars, black holes and the sun.

POSSIBLE FUTURES IN SPACE	**30:00**	**9-Adult**	**TC12**

Contemplates futuristic ideas for man's exploration and exploitation of space, including space tugs and space stations. Highlights terrafarming and methods of colonizing foreign worlds.

EXTRATERRESTRIALS?	**30:00**	**7-Adult**	**TC13**

Contemplates the imagination as it relates to the progress of man. Science fiction works, such as Jules Verne's "From the Earth to the Moon" and H. G. Wells' "War of the Worlds," have played a role in man's progress.

TEACHER SILENT VIDEO LESSON GUIDE	**30:00**	**4-Adult**	**TC14**

Consists of questions, definitions and student activities which teachers can use to plan lessons around the "Life in the Universe" series.

SPACE SCIENCES

LIVE FROM ANTARCTICA SERIES

	Run Time	Grade	Cat. #
TAPE 1	**54:00**	**4-12**	**TD1**

Visits the coldest, windiest, iciest place on Earth.

TAPE 2	**56:00**	**4-12**	**TD2**

Explains life in Antarctica, then and now.

	Run Time	Grade	Cat. #
TAPE 3	**56:00**	**4-12**	**TD3**
Discusses the spaceship South Pole.			
TAPE 4	**56:00**	**4-12**	**TD4**
Explains from Pole to Planet.			

SPACE SCIENCES

MISSION EARTHBOUND SERIES

	Run Time	Grade	Cat. #
TAPE 1	**60:00**	**4-10**	**TE1**
Explains Mission Earthbound.			
TAPE 2	**60:00**	**4-10**	**TE2**
Discusses Earth's atmosphere: a cosmic perspective.			
TAPE 3	**60:00**	**4-10**	**TE3**
Explains the atmospheric ozone - what it is and what is happening to it.			
TAPE 4	**60:00**	**4-10**	**TE4**
Discusses climate systems and climate modeling.			
TAPE 5	**60:00**	**4-10**	**TE5**
Explains green house gasses and climate change.			
TAPE 6	**60:00**	**4-10**	**TE6**
Gives challenges and solutions to global atmospheric change.			

SPACE SCIENCES

THE NIGHT SKY SERIES

	Run Time	Grade	Cat. #
TAPE 1	**60:00**	**K-12**	**TF1**
Discusses the following topics: types of telescopes, a binocular tour, observing the night sky and a conversation with John Dobson.			

	Run Time	Grade	Cat. #
TAPE 2	**60:00**	**K-12**	**TF2**

Discusses the following topics: phases and craters of the moon, meteor and asteroids, the night sky, and total lunar eclipse.

SPACE SCIENCES

PLANETARY

	Run Time	Grade	Cat. #
OUR SOLAR SYSTEM	**5:00**	**K-6**	**TG1**

Teaches the names, orbital positions, and characteristics of each planet using the phrase "my very educated mother just served us nine pizza pies." The program is animated, set to music, and appropriate for early elementary grades.

MAGELLAN - MAPPING THE PLANET VENUS	**9:09**	**7-12**	**TG2**

Uses simple terms to explain how the sophisticated radar instruments on Magellan actually map the planet and how the information is sent back to Earth simulated flight over the planet highlighting important surface features.

BEST OF JPL	**120:00**	**7-12**	**TG3**

Reviews the story and contributions of the Jet Propulsion Laboratory in Pasadena, CA.

19 MINUTES TO EARTH	**15:00**	**9-12**	**TG4**

Examines the scientific findings of the Viking missions to Mars. Viewers are introduced to a variety of information including soil and atmospheric analysis, and biological and geological data.

MARS ROVER SAMPLE RETURN MISSION	**5:00**	**7-12**	**TG5**

Describes the purpose of this mission. This computer-animated video depicts one possible scenario for the three-year mission.

THE CRAF & CASSINI MISSIONS	**9:00**	**6-12**	**TG6**

Describes the CRAF and CASSINI Missions in the Mariner Mark II Series. These two missions are designed to explore the outer solar system.

	Run Time	Grade	Cat. #

URANUS: I WILL SEE
SUCH THINGS **29:00** **9-Adult** **TG7**
Begins with the history of William Herschel's discovery of Uranus in 1781. Project scientists discuss recent discoveries made about Uranus using pictures taken during the Voyager 2 flyby in 1986.

ULYSSES: A VOYAGE
TO THE SUN **10:00** **9-Adult** **TG8**
Describes the mission, planned jointly by NASA and the European Space Agency, to explore the atmosphere around the sun. Using information obtained from Skylab, the program discusses the sun's corona and electromagnetic field, as well as solar wind and solar flares.

NASA SOLAR SYSTEM
EXPLORATION PART 1 **60:00** **9-Adult** **TG9**
Discusses NASA's research and exploration of the solar system. This film is produced with the help of JPL.

NASA SOLAR SYSTEM
EXPLORATION PART II **60:00** **9-Adult** **TG10**
Discusses NASA's research and exploration of the solar system. This film is produced with the help of JPL.

COSMIC COLLISION **60:00** **9-Adult** **TG11**
Discusses the comet P/Shoemaker-Levy 9.

DESTINATION MARS **33:30** **4-Adult** **TG12**
Depicts the first human mission to Mars in 2018. This is a fun video.

CASSINI HUYGENS: MISSION
TO SATURN AND TITAN **7:20** **5-12** **TG13**
Discusses the goals for this mission. This mission will explore Saturn's atmosphere and interior and will also explore the planet's rings, magnetosphere, numerous satellites and the planet-size moon Titan.

MARS, WHAT WOULD
YOU WEAR? **3:00** **K-12** **TG14**
Depicts what an astronaut might wear to Mars. This is a humorous presentation designed to get students thinking about Mars. Hosted by Johnson Space Center engineer Phil West.

	Run Time	Grade	Cat. #

BLACKOUT! SOLAR STORMS AND THEIR EFFECT ON PLANET EARTH **19:00** **5-Adult** **TG15**
Takes you on a journey from the Sun to the Earth as eruptions known as solar storms travel to Earth and effect our lives in ways we still don't completely understand. 3-D animations bring to life the journey, through 150 million kilometers of space.

COLORS OF THE SUN **22:00** **5-8** **TG16**
Discusses the visible spectrum plus students will also study how astronomers use special tools to learn more about objects that are far away and observe how white light can be refracted to form a color spectrum that has a pattern.

SPACE SCIENCES

REACHING FOR THE STARS VIDEO CONFERENCE

	Run Time	Grade	Cat. #

TAPE 1 **60:00** **6-Adult** **TH1**
Discusses the following topics: laser detection of wind shear and fluid flow and chaos.

TAPE 2 **60:00** **6-Adult** **TH2**
Discusses neutron shielding material and satellite communications.

TAPE 3 **30:00** **6-Adult** **TH3**
Discusses fluid mechanics and aerodynamics.

SPACEWORK SERIES

	Run Time	Grade	Cat. #
EPISODE 1	**30:00**	**4-12**	**U1**

Includes two segments. The first segment explores the use of simulators to aircraft research. The second segment is about a Space Shuttle program called the "Getaway Special." For a relatively small fee, people can send experiments aboard the Space Shuttle.

EPISODE 2	**30:00**	**7-Adult**	**U2**

Includes taped stories about NASA activities: the aerospace plane, XV-15 tilt rotor which takes off like a helicopter and flies like a propeller plane, food for space, moon base concepts and a clip about the effects of snow on Earth.

EPISODE 3	**30:00**	**7-Adult**	**U3**

Includes seven NASA clips: restoring Miss Liberty, research aircraft X-29, plant research, laser artery repair, life saving satellites, robotics and lunar ranging.

EPISODE 4	**30:00**	**7-Adult**	**U4**

Includes clips about space station, airflow research, human factors studies, the Voyager encounter with Uranus, medical imaging, research on rotor craft and building a lunar base.

EPISODE 5	**30:00**	**7-Adult**	**U5**

Highlights the unistick vehicle controller that may help handicapped persons, a demonstration of the world's most powerful computer, a plane which changes the shape of its wings during flight and update on the Space Shuttle.

WHAT'S IN THE NEWS - SPACE

	Run Time	Grade	Cat. #
TAPE 1	**60:00**	**4-8**	**UA1**

Discusses the following programs: Beyond Planet Earth Then and Now; Eyes in the Sky, Astronomy; Gravity a Force of Nature; and Space Shuttle - Countdown to the Future.

TAPE 2	**60:00**	**4-8**	**UA2**

Reviews the following programs: Teamwork in Space; Spaceship Earth; Living in Space; and Working in Space.

	Run Time	Grade	Cat. #
TAPE 3	**60:00**	**4-8**	**UA3**

Discusses the following programs: Eyes in the Sky - Communications Satellites; Eyes in the Sky - Land Survey Satellites; Eyes in the Sky - Weather Satellites; and Space Exploration - The Next Frontier.

ANIMAL PHYSIOLOGY IN SPACE	**11:30**	**4-8**	**UA4**

Discusses the frog embryology experiment.

TECHNOLOGY UTILIZATION

	Run Time	Grade	Cat. #
THE SERENDIPITY MACHINES	**30:00**	**12-Adult**	**V1**

Highlights some of the many innovative spinoffs invented by NASA.

CONNECTING TO THE FUTURE TODAY	**11:00**	**K-12**	**V2**

Discusses the future of internet in the classroom.

GLOBAL QUEST: INTERNET IN THE CLASSROOM	**13:00**	**K-12**	**V3**

Explains the importance of internet in the classroom.

GLOBAL QUEST II: TEACHING WITH THE INTERNET	**22:00**	**K-12**	**V4**

Discusses the importance of teachers using the internet in the classroom.

VIGNETTE TAPES

	Run Time	Grade	Cat. #

TAPE 1 **60:00** **K-12** **W1**

Discusses the following topics: aircraft/stall spin research; Challenger Kupier Airborne Observatory; ear on the universe; from planes to freeways; icing research; restoring Miss Liberty; plant research; laser artery repair; infrared astronomical satellite; volcanic cloud studies; suiting up for the Shuttle; Shuttle practice landings; wind generator; astronaut backpack; STS-1 and Columbia flight one.

TAPE 2 **60:00** **K-12** **W2**

Discusses the following topics: worth a thousand words; the model builders; lifesaving satellites; robotics; lunar ranging; food for space; Space Shuttle highlights; laser rendezvous and docking; Pioneer 10; solar powered medical system; offshore radar computer; sun power and Spacelab.

TAPE 3 **60:00** **K-12** **W3**

Discusses the following topics: Space Station conceptual designs; teleoperators; icing research; space process to aid coronary diagnosis; Venus; Spacelab; advanced propeller research; storm hazard research; Venus; the space fleet; plant space suits; electric cars; Pioneer; infrared astronomical satellite; Voyager/Saturn encounter; offshore radar computer; space process to aid coronary diagnosis; Voyager 2 results; satellite tracks rover; sun power; the Sun up close; Earth Survey Aircraft; truck and motor home aerodynamics; teacher in space; airflow research; human factories studies; and Comet Halley returns.

TAPE 4 **60:00** **K-12** **W4**

Discusses the following topics: space colonization; gearing up for 1988; testing the water from space; the Four Great Observatories; Anna Fisher; the lost river; satellite freeze warning; Apollo 11 The First Step; Voyager Encounter Uranus; medical imaging; Rotocraft research; building a lunar base; E. T. re-enter; and aerospace.

TAPE 5 **60:00** **K-12** **W5**

Discusses the following topics: back to propellers; monitoring history; space suit design; from space to Earth; cool suit; ozone hole; better way to fly; new insulin pump; Mars look alike; what's killing the trees?; world's largest wind tunnel; and from science to art.

	Run Time	Grade	Cat. #
TAPE 6	**60:00**	**K-12**	**W6**

Discusses the following topics: ocean wave study; recycling in space; space adaption; new prosthetic devices; JCS Reduced Gravity program; spacelab life science; combating malaria; Voyagers last encounters; better airplane wings; sights and sounds of space; Space Station Freedom; space exploration initiative; student researchers; and the National Aero Space Plane.

TAPE 7	**60:00**	**K-12**	**W7**

Discusses the following topics: Magellan, Galileo and Ulysses; finding fish from above; X-29 experiment in flight; improving mapping system; future energy source; global green house source; LDEF update; NACA-NASA - 75 years; Hubble Space Telescope; Louisiana delta study; enhancing sight; views from space; firefighters breathing system; supporting life in space; the future of robotics; and the Arctic Ozone Expedition.

WEATHER

	Run Time	Grade	Cat. #

THE WEATHER WATCHERS **15:00** **7-11** **X1**
Explains the use and importance of meteorological information regarding severe storms obtained from NASA satellites. This tape contains unusual footage of the formation of a tornado as well as actual shots of its awesome force.

HURRICANE **28:00** **7-10** **X2**
Tracks an actual hurricane from its tame beginning in the Atlantic to its violent and deadly landfall at Galveston, Texas, in August 1983.

THE CLIMATE FACTOR **25:05** **7-11** **X3**
Takes a close look at the climate factor and many scientists studying climate's impact on man and man's impact on climate. Subjects covered include agricultural architecture, fuel supply demands, the greenhouse effect, and more.

TERRIBLE TUESDAY **23:30** **7-10** **X4**
Takes us to Wichita Falls, Texas, to hear compelling stories of survivors from one of history's worse tornado outbreaks.

THE AWESOME POWER:
FLASH FLOODS **17:00** **7-11** **X5**
Shows graphic footage of flash floods shot in Colorado, Pennsylvania, and Texas.

SURVIVAL **17:00** **7-10** **X6**
Shows graphic scenes from disasters such as earthquakes, floods, hurricanes, volcanoes, forest fires, and the means being taken to warn people about them.

EARTHQUAKE BELOW **15:00** **7-11** **X7**
Explains how earthquakes are caused and shows the fault systems which are prime causes.

NEW RELEASES

	Run Time	Grade	Cat. #

GULF OF MEXICO TAPES

	Run Time	Grade	Cat. #

A PARTNERSHIP FOR ACTION **15:00** **6-12** **GM1**
Gives a brief but detailed description of "Take Action Plans" in order to enhance the Gulf of Mexico aquatic resources, seafood and waterfowl.

ALABAMA THE BEAUTIFUL **36:00** **K-12** **GM2**
Details all the major resources and historical sites found in Alabama.

AMERICA'S SHINING SEA **7:00** **5-12** **GM3**
Discusses wetlands, beaches, boating, waterfowl, fishing and other natural resources found along the Gulf of Mexico.

AMERICA'S WETLANDS **26:00** **10-12** **GM4**
Gives information on birds, waterfowl, marsh grasses and water quality and how all of these things are dependent upon our wetlands.

I NEED THE EARTH AND
THE EARTH NEEDS ME **19:00** **K-6** **GM5**
Shows how the Earth is our home. All living things on Earth depend on each other and all need a quality environment.

LEND A HAND IN THE SAND **13:00** **K-12** **GM6**
Gives a realistic view on how marine debris endangers and even kills our marine friends in the oceans and coastal waters. It also informs us on how we can help in the battle to keep our beaches and streams clean.

MUSICAL SCIENCE TOUR **19:00** **K-12** **GM7**
Gives an exciting message of this energetic and creative video. It has a live musical band with sing-along songs.

RECYCLING **10:40** **6-12** **GM8**
Shows how people can help eliminate waste going to landfills. Recycle!

SEA CAMP 1989 **25:00** **K-6** **GM9**
Previews a day at J. L. Scott Marine Laboratory in Biloxi, Mississippi. Actual footage showing students experiencing marine education project at the lab.

MAKING WAVES **21:00** **5-12** **GM10**
Discusses why we should care about the Gulf of Mexico.

	Run Time	Grade	Cat. #
STATUS OF DUCKS	**21:00**	**10-12**	**GM11**

Gives technical information on the duck species and their habitat.

"TAKE PRIDE GULFWIDE"	**18:00**	**6-12**	**GM12**

Presents an action plan for a clean Gulf of Mexico. It discusses how litter and marine debris affect our beaches and marine animals.

TAKE PRIDE GULFWIDE TEXAS OFFICE	**20:00**	**10-12**	**GM13**

Explains how dependent we are on the Gulf.

THE MARINE GANG AT SEMINOLE ELEMENTARY, LARGO, FLORIDA	**40:00**	**K-6**	**GM14**

Lists things we get from the sea such as lipstick, candy, ice cream, cat food, etc.

TREASURE QUEST	**26:00**	**2-5**	**GM15**

Stars Lisa Lobster, Sally Shrimp, Drats, Gumby Grouper, Daisy Dolphin, Patty Pelican and Tony Turtle. All the marine characters discuss the environmental issues facing the Gulf.

WATERFOWL FOR THE FUTURE	**16:00**	**4-12**	**GM16**

Teaches respect for our waterfowl by learning more about them through this guided tour on different types and their migration behavior.

WETLAND FOR THE FUTURE	**10:00**	**4-12**	**GM17**

Explains what a wetland is and also the marshes, animals and all the other life living there in an easy-to-understand way.

WETLAND IN CRISIS	**20:00**	**10-12**	**GM18**

Answers questions such as "What is the purpose of wetlands?"

YEAR OF THE GULF OF MEXICO, 1992	**30:00**	**6-12**	**GM19**

Explains topics on habital degradation and purchasing federal duck stamps from your local post office to support wetland acquisition.

THE PETER W. ANDERSON AN ENVIRONMENTAL VOYAGE	**8:30**	**4-12**	**GM20**

Brings your students aboard an environmental voyage. See what the Anderson and her crew do everyday to help prevent pollution and measure its effects along America's coasts.

	Run Time	Grade	Cat. #
SAVING INKY	**15:50**	**K-6**	**GM21**

Discusses how volunteers try to determine why a baby pygmy sperm whale ("Inky") beaches her self on the New Jersey shore. Watch as volunteers try to determine what was wrong with "Inky" and their desperate struggle to save her life.

REVERSING THE TIDE	**15:00**	**4-12**	**GM22**

Documents, informs and educates our students on coastal erosion and coastal restoration efforts.

NO SAFE HARBOR	**19:03**	**4-12**	**GM23**

Explores the condition of our waters and our fish from the eastern bays to the western sounds.

FABULOUS WETLANDS	**7:00**	**4-12**	**GM24**

Gives humorous educational view of wetlands.

GULF OF MEXICO PROGRAM FINDING SOLUTIONS	**14:40**	**4-12**	**GM25**

Discusses finding solutions to marine debris and its affect on the Gulf of Mexico.

ADOPT A WATERSHED	**8:32**	**4-12**	**GM26**

Discusses curriculum for teachers who plan to implement an Adopt-a-Watershed program for students in grades K-12.

ARANSAS SHORELINE PROTECTION	**18:20**	**4-12**	**GM27**

Discusses whooping cranes, shorelines and habitat restoration loss in Aransas, Texas.

SARASOTA BAY RECLAIMING PARADISE	**14:00**	**4-12**	**GM28**

Reviews Sarasota Bay improvements and solution projects.

AMERICA'S WETLANDS REVISED 1987	**26:10**	**4-12**	**GM29**

Views the wetlands in America and its positive impact on us.

EPA - LESS IS MORE: POLLUTION PREVENTION IS GOOD BUSINESS	**23:13**	**4-12**	**GM30**

Discusses how pollution can be prevented.

	Run Time	Grade	Cat. #
COASTAL OCEAN IN CRISIS SCIENCE FOR SOLUTIONS A NOAA REPORT	**14:25**	**4-12**	**GM31**
Explains NOAA's activities in finding solutions to coastal ocean impacts.			
PRESERVE OUR BAY	**5:00**	**4-12**	**GM32**
Explains a plan to keep Galveston Bay clean and healthy.			
AMERICA'S PORTS AND WATERWAYS: OPEN CHANNELS TO TRADE	**8:30**	**4-12**	**GM33**
Discusses the importance of ports and waterways and how they affect us.			
WETLANDS AND STORMWATER	**11:49**	**4-12**	**GM34**
Explains the effects of urban runoff to coastal wetlands in the Pugent Sound.			
TOXIC FISH - CNN REPORT	**22:00**	**9-12**	**GM35**
Shows CNN news footage of toxic fish.			
YOUR BAY TODAY AND TOMORROW	**18:00**	**9-12**	**GM36**
Discusses Narragansett Bay's water quality and current condition.			
UNDERSTANDING SEWAGE TREATMENT AND DISPOSAL SYSTEMS	**18:00**	**9-12**	**GM37**
Discusses sewage treatment and disposal systems.			
SAFE SHELLFISH HARVESTING	**14:00**	**9-12**	**GM38**
Explains the safe way to harvest shellfish.			
CITIZENS VOLUNTEER MONITORING CONFERENCE	**120:00**	**9-12**	**GM39**
Details of the conference are discussed in this video.			
GULF INITIATIVE: AMERICA'S SEA	**17:10**	**4-12**	**GM40**
Explains the Gulf's initiative concerning America's seas.			
KEEPING THE SPARKLE IN LOUISIANA'S WATERS	**24:00**	**4-12**	**GM41**
Discusses a consumer education program on low phosphate detergents.			

	Run Time	Grade	Cat. #
WATERWAYS	**25:00**	**9-12**	**GM42**
Explains a coral reef classroom at Key West, Florida.			
OZONE: DOUBLE TROUBLE	**17:27**	**7-12**	**GM43**
Discusses the global problem of the depletion of the ozone layer.			
TEXAS SHORES: SAVING WHAT'S LEFT	**26:50**	**7-12**	**GM44**
Discusses the shoreline erosion issues along the Texas coast.			
WATER QUALITY - BASED APPROACH TO POLLUTION CONTOL	**16:00**	**7-12**	**GM45**
Discusses water quality-based approaches to pollution control.			
WETLANDS FOR THE FUTURE WITH GULF COAST JOINT VENTURE	**16:47**	**9-12**	**GM46**
Discusses North American Waterfowl Management Plan along with joint venture projects to protect, restore, enhance and create wetlands.			
EVALUATING YOUR COASTAL PROPERTY	**18:40**	**9-12**	**GM47**
Discusses still water level, storm surge, storm wave run up height, and construction setback on the Great Lakes.			
CAREERS IN WATER QUALITY	**16:20**	**5-12**	**GM48**
Shows a group of high school students discussing their plans for college and careers.			
TOMORROW'S ENERGY TODAY	**26:00**	**5-12**	**GM49**
Reviews environmentally friendly alternative sources of energy.			
SAVING WATER: THE CONSERVATION VIDEO	**8:00**	**5-12**	**GM50**
Discusses water conservation methods.			
H2O GROUND WATER VIDEO	**9:20**	**5-12**	**GM51**
Discusses protecting ground water from household and industrial pollution.			
HAUNTED WATERS, FRAGILE LANDS	**15:00**	**5-12**	**GM52**
Discusses the Barataria-Terrebonne National Estuary Program.			

	Run Time	Grade	Cat. #

GULF OF MEXICO **6:00** **5-12** **GM53**
Discusses environmental impacts affecting Florida's coastal estuaries and the Gulf of Mexico.

LIFE ON THE EDGE **21:00** **5-12** **GM54**
Examines environmental impacts such as marine debris; freshwater inflow; pesticides and over enrichment.

GULF OF MEXICO SYMPOSIUM **3:11** **5-12** **GM55**
Reviews highlights of the 1995 Gulf of Mexico Symposium held in Corpus Christi.

MISSISSIPPI RIVER PROJECT **8:00** **5-12** **GM56**
Shows footage of students from the Gulf states taking water quality test samples.

GULF OF MEXICO VIDEO II **15:34** **5-12** **GM57**
Shows a grandfather's view as told to his granddaughter on being environmentally aware of our natural Gulf of Mexico treasures.

NOAA: TRASHING THE OCEAN **7:30** **5-12** **GM58**
Explores threatened garbage dumps, recycling and plastic consumption by animals.

AN ADVENTURE WITH A TREE **8:00** **5-12** **GM59**
Discusses the importance of trees in our environment.

CONVICTION OF THE HEART
NATIONAL PARK SERVICE **8:00** **5-12** **GM60**
Discusses the importance of protecting our National Parks.

FUEL-LESS: YOU CAN'T
BE COOL WITHOUT FUEL **16:17** **5-12** **GM61**
Shows a high school girl's perspective on what life is like without oil.